03050202-040

(Ashley River)

General Description

Watershed 03050202-040 is located in Dorchester and Charleston Counties and consists primarily of the ***Ashley River*** and its tributaries from Dorchester Creek to the Charleston Harbor. The watershed occupies 44,764 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Bohicket-Udorthents-Udipsamments-Yonges series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 45.0% urban land, 32.9% forested land, 13.4% nonforested wetland, 6.2% water, 1.3% scrub/shrub land, 0.7% forested wetland, and 0.5% agricultural land.

This segment of the Ashley River originates at Bacon Bridge and accepts drainage from the Dorchester Creek watershed. The river then flows past the Old Dorchester State Park and Middleton Gardens to receive drainage from Coosaw Creek, Olive Branch, and Sawpit Creek. Popperdam Creek enters the river near Magnolia Gardens, the Charleston U.S. Air Force Base, and the Municipal Airport. Further downstream, MacBeth Creek enters the river followed by Keivling Creek and Church Creek. The Ashley River is classified SA from Bacon Bridge to Church Creek, where it changes from SA to SA* (DO not less than 4 mg/l) and remains SA* to the entrance of Orangegrove Creek (Oldtown Creek). Between Church Creek and Orangegrove Creek, the Ashley River receives drainage from Bulls Creek (SA*), Brickyard Creek (SB), and Duck Island Canal (SA*). Downstream of Orangegrove Creek, the Ashley River reverts its classification to SA and drains into the Charleston Harbor and the Atlantic Ocean. In addition to the Old Dorchester State Park and the historic gardens and plantations, another natural resource in the watershed is the historic Charles Towne Landing State Park on the Ashley River near Bulls Creek. There are 237.9 acres of lake waters and 3,017.2 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
MD-049	P/SPRP	SA	ASHLEY RIVER AT MAGNOLIA GARDENS
MD-246	P/W	SA*	CHURCH CREEK MOUTH
MD-135	S/W	SA*	ASHLEY RIVER AT S.C. 7 (NORTH BRIDGE)
MD-052	P/INT	SA	ASHLEY RIVER AT SAL RR BRIDGE

Ashley River – There are three SCDHEC monitoring sites along this reach of the Ashley River. Aquatic life uses are not supported at the upstream site ***(MD-049)*** due to dissolved oxygen, turbidity, copper, and nickel excursions. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions. Aquatic life and recreational uses are fully supported at the midstream site ***(MD-135)***, and a significant decreasing trend in five-day biochemical oxygen demand and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. At the furthest downstream site ***(MD-052)***, aquatic life uses are fully

supported. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant decreasing trend in pH. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Church Creek (MD-246) - Aquatic life uses are fully supported. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are partially supported; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Charles Towne Landing State Park Pond - The pond has been treated annually from 1989-2001, and 2004 with aquatic herbicides in an attempt to control the growth of aquatic macrophytes that have impaired bank fishing and boating access. *Tilapia* were introduced in 1991, at a stocking rate of 200 fish/vegetated acre for a total of 1000 fish. The fish were restocked annually at the same rate and numbers from 1992 to1996.

A fish consumption advisory has been issued by the Department for mercury and includes portions of the Ashley River within this watershed (see advisory p.69). Fish tissue samples from the lower Ashley River (downstream of US 17) indicate no advisories are needed at this time.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
ASHLEY RIVER G&S ROOFING PRODUCTS PIPE #: 001-003 FLOW: M/R	SC0002771 MINOR INDUSTRIAL
ASHLEY RIVER KINGS GRANT ON THE ASHLEY PIPE #: 001 FLOW: 0.238	SC0021911 MINOR DOMESTIC
ASHLEY RIVER TOWN OF SUMMERVILLE/WWTP PIPE #: 001 FLOW: 10.0	SC0037541 MAJOR DOMESTIC
ASHLEY RIVER MIDDLETON INN PIPE #: 001 FLOW: 0.014	SC0039063 MINOR DOMESTIC
BRICKYARD CREEK G&S ROOFING PRODUCTS	SC0002771 MINOR INDUSTRIAL

PIPE #: 003 FLOW: M/R

COOSAW CREEK	SC0038822
DORCHESTER COUNTY/LOWER DORCHESTER PLT	MAJOR DOMESTIC
PIPE #: 001 FLOW: 4.0	

Nonpoint Source Management Program

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
MCDIRT LLC.	1249-35
PALMETTO LAKE	SAND

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
MOORE DRUMS	--------
INDUSTRIAL	--------
CHARLESTON COUNTY DUMP	---------
MUNICIPAL	CLOSED
G&S ROOFING PRODUCTS	IWP-046
INDUSTRIAL	-------
LOCKWOOD BLVD. DUMP	-------
MUNICIPAL	CLOSED

Growth Potential

There is a high potential for growth in this watershed, which contains portions of the Cities of Charleston and North Charleston. The west bank of the Ashley River contains numerous historic structures including Middleton Place, Drayton Hall, Magnolia Gardens, Runnymead Plantation, and Charles Towne Landing State Park; all are important scenic, cultural, and tourism resources. Areas with a high potential for growth include Amberwood, Jerico on the Ashley, Summerfield, River Oaks, and Shadowmoss in Charleston County; and Coosaw Creek, Whitehall, Avanti Tract, Appian Landing, Bakers Landing, Indigo Fields, and Ricefield/Windsor Hill in Dorchester County. There are water and sewer services available to all these growth areas.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the ***Ashley River*** and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Ashley River portion of the system contains watersheds 03050202-020 and 03050202-040. Dissolved oxygen violations at two stations along the Ashley River (CSTL-102 and MD-049) are considered natural due to conditions exacerbated by point and nonpoint

sources of pollution. A water quality model was developed to predict the impact of point source dischargers on dissolved oxygen concentration in the system. Results indicate the need for an overall 36% reduction in discharge of ultimate oxygen demand (UOD) to the Ashley River. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.